



HISTORY OF VOA & MORE

ANAND CHOUDRI, KC2KPG - RARA VICE PRESIDENT

Begun in 1942, Voice of America has been the voice of freedom to the world. For 74 years, VOA has broadcast the unbiased, non-propagandized news, good or bad, shared our music, and shared our culture, so that people living in repressive governed countries could understand what it is like to really be free. The VOA Charter states: "VOA news will be accurate, objective and comprehensive."

VOA has had a major positive impact on the growth of freedom throughout the world beginning in WWII, the breakdown of the Iron Curtain and the Bamboo Curtain, and continuing today. People risked their very lives to listen to VOA.

VOA began operations in 1942 using BBC transmitters. In 1944, three stations were constructed in the US at Bethany Ohio, Dixon and Delano California and began operations. At its peak, VOA used some 40 transmitter sites throughout the world and broadcast in 55 languages, including "Special English".

In 2014, the Delano California VOA station was turned over to the General Services Administration to be sold for scrap. Closed since October 2007, the station, like the dinosaurs, was scheduled for extinction. The Antique Wireless Association (AWA) and the Collins Collectors Association formed the Collins Radio Heritage Group in order to save one of the three Collins 821-A 250,000 watt transmitters and the station control room. Today, after an amazing effort, the Delano Station control room and the 250,000 watt transmitter are displayed in the Antique Wireless Museum.

Robert Hobday, N2EVG of the AWA will expound on what they went through in order to save this transmitter. Robert has been a member of AWA for 32 years and currently serves as the AWA Deputy Director. He retired from RG&E and Energetix in 2010 where he was Managing Director. Robert is a past President and a life member of RARA, holds a General class license as N2EVG, plays in four bands, enjoys amateur furniture making and woodworking, and has been a Deacon of his church for 14 years. He lives in Mendon, New York where he has a small horse farm.

Chinese Radio Clinic

At our April meeting, we will also have a Chinese Radio Clinic as a break-out session. If you own one of these cheap radios and haven't been able to figure out how to program those darn things, just bring it over and a couple of young guys will help us to program the repeaters of your choice into these radios. The

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spreadsheet below shows the standard frequency listing that will be used for the programming. If there are other frequencies that you would like to have set up in your radio, please bring all relevant information to the meeting. Make sure your radio is fully charged before you bring it.

Location	Name	Frequency	Duplex	Offset	Tone	rToneFreq	Mode
0	NCF	146.52		0			FM
1	WR2AHL	145.11 -		0.6	Tone	110.9	FM
2	K2ISO	145.17 -		0.6	Tone	110.9	FM
3	N2EPO	145.21 -		0.6	Tone	110.9	FM
4	WA2DQL	145.27 -		0.6	Tone	141.3	FM
5	W2XRX	145.29 -		0.6	Tone	141.3	FM
6	N2HJD	145.41 -		0.6	Tone	110.9	FM
7	W2ONT	145.45 -		0.6	Tone	110.9	FM
8	ARISS	145.8 -		1.31			FM
9	N2MPE	146.61 -		0.6	Tone	110.9	FM
10	WA2CAM	146.64 -		0.6	Tone	141.3	FM
11	WR2ROC	146.655 -		0.6	Tone	110.9	FM
12	WA2EMO	146.685 -		0.6	Tone	110.9	FM
13	KB2VZS	146.715 -		0.6	Tone	88.5	FM
14	WR2AHL	146.76 -		0.6	Tone	110.9	FM
15	WR2ROC	146.79 -		0.6	Tone	110.9	FM
16	K2BWK	146.82 -		0.6	Tone	110.9	FM
17	K2RRA	146.88 -		0.6	Tone	110.9	FM
18	N2HJD	146.925 -		0.6	Tone	110.9	FM
19	WR2AHL	146.94 -		0.6	Tone	110.9	FM
20	W2QYT	147 -		0.6	Tone	71.9	FM
21	AA2GV	147.03 +		0.6	Tone	110.9	FM
22	K2GXT	147.075 +		0.6	Tone	110.9	FM
23	W2ONT	147.09 +		0.6	Tone	110.9	FM
24	N2FQN	147.105 +		0.6	Tone	88.5	FM
25	WB2SSJ	147.135 +		0.6			FM
26	W1XY	147.18 +		0.6	Tone	110.9	FM
27	N2HJD	147.225 +		0.6	Tone	110.9	FM
28	K1NXG	147.24 +		0.6	Tone	110.9	FM
29	K2RSY	147.27 +		0.6	Tone	71.9	FM
30	W2SO	147.285 +		0.6			FM
31	WA2CAM	147.315 +		0.6	Tone	141.3	FM
32	WR2ROC	147.345 +		0.6	Tone	110.9	FM
33	WR2AHL	442 +		5	Tone	110.9	FM
34	K2GXT	442.075 +		5	Tone	110.9	FM
35	W2ONT	442.2 +		5	Tone	110.9	FM
36	KC2GXY	442.55 +		5	Tone	110.9	FM
37	K2RRA	442.7 +		5	Tone	110.9	FM
38	N2HJD	442.8 +		5	Tone	110.9	FM
39	N2HJD	442.9 +		5	Tone	110.9	FM

Location	Name	Frequency	Duplex	Offset	Tone	rToneFreq	Mode
40	N2HJD	442.925 +		5	Tone	110.9	FM
41	KB2CHM	443.1 +		5	Tone	110.9	FM
42	WR2AHL	443.6 +		5	Tone	110.9	FM
43	K2SA	443.7 +		5	Tone	110.9	FM
44	N2HLT	443.75 +		5	Tone	100	FM
45	KB2CHY	443.9 +		5	Tone	110.9	FM
46	WR2ROC	444.25 +		5	Tone	110.9	FM
47	W2SO	444.275 +		5			FM
48	KC2RHY	444.3 +		5	Tone	110.9	FM
49	WR2ROC	444.35 +		5	Tone	110.9	FM
50	W2RFC	444.4 +		5	Tone	110.9	FM
51	WR2AHL	444.55 +		5	Tone	110.9	FM
52	N2HJD	444.7 +		5	Tone	110.9	FM
53	WB2KAO	444.85 +		5	Tone	110.9	FM
54	K1NXG	444.875 +		5	Tone	110.9	FM
55	N2BZX	444.9 +		5	Tone	110.9	FM
56	KB2SOZ	444.925 +		5	Tone	88.5	FM
57	WR2AHL	444.95 +		5	Tone	110.9	FM
58	WB2SSJ	447.175 -		5			FM

Please join your fellow members on Friday April 1, 2016 at the BSA Headquarters, 2320 Brighton-Henrietta Town Line Road. The meeting starts at 7:00 pm.

PREZ SEZ

WILL MULLANEY, KC2VSJ—RARA PRESIDENT

It's time for another Prez Sez! As Rochester is very rapidly thawing out, our ability to move out of the shack and do some stuff outside is increasing. Our friends over at XRX will be hosting a Fox Hunt soon, so get your gear out, test it, and do some practice! Our RARA Academy Spring quarter classes are well underway, helping a bunch of people get their Tech and/or General licenses. Additionally, our great volunteers are working on getting our Hamfest together. As a reminder, it will be on Saturday the 28th at Kodak Park, rain or shine. You'll get the chance to buy and sell a bunch of stuff, hang out with old friends and meet new ones, have some good food, and maybe even win some cool prizes. Check us out online at www.rochesterhamfest.org or on Facebook. Like us online and join our Facebook event and you'll have the opportunity to win some additional cool prizes.

Our next meeting will be April 1st, and I'm sure it will be filled with many jokes and other gotchas. Our friends from the AWA will be presenting, so stop by at 7:00pm Friday the 1st at the BSA headquarters in Brighton on Brighton-Henrietta Town Line road. We'll give you some coffee and doughnuts. Additionally, we will be hosting our "Chinese Radio Clinic" so if you have a low-cost HT that you need some help programing or operating, be sure to bring it.

Finally, don't forget that if you do have questions, submit them to askelmer@rochesterham.org and we will make sure we get an answer for you in an upcoming edition of the RAG.

CALENDAR OF EVENTS

- APRIL 1ST** - RARA General Meeting
7:00 PM at BSA Headquarters, 2320 Brighton Henrietta Town Line Rd
- APRIL 14TH** - RARA Board of Directors
5:30 PM RIT Engineering Hall, Room 2110
- APRIL 16TH** - RARA VE Testing
10:00 AM RIT Gleason Hall, Room 9-3139



RARA

**NEW
LOCATION!**

**Rochester
HAMFEST**

**200 West Ridge Rd, Rochester, NY
Eastman Business Park ("Theater-on-the-Ridge")**

We have MOVED! We're NO LONGER at Barnard Fireman's Field

MEMORIAL DAY WEEKEND

SATURDAY

MAY 28, 2016



\$5 p.p. Admission

(FREE to RARA members and
ALL under 18 years old)

Flea Market opens at 6:00 A.M.

(\$5 per "flea market slot" or
FREE general, "no sell" parking)

FREE VE Exams FREE QSL Checks

(for ARRL Awards)

FREE

Door Prize Ticket (18+ years old, only)

INDOOR VENUE

Commercial Space

Courtesy Store

(we sell & donate 10%)

Ticket Prizes

(one bucket / prize; your choice)

Membership Table

(get cool RARA gear!, too!)

AND EVEN MORE!

OTHER INTERESTING STUFF ...

Breakfast & Lunch Avail.

Discounted Hampton Inn

Indoor Restrooms

On-site ATM

More Information:

RochesterHamfest@gmail.com

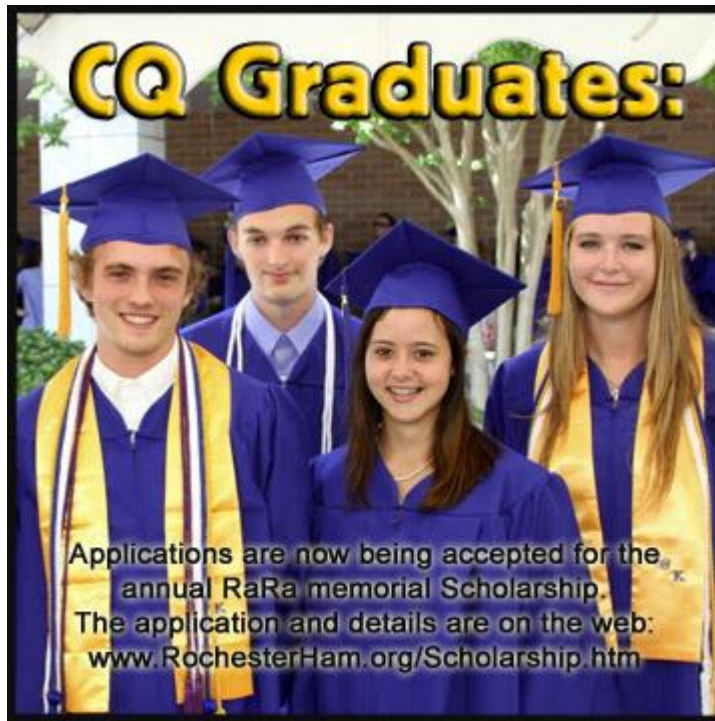
RochesterHamfest.org

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ROCHESTER AMATEUR RADIO ASSOCIATION

MEMORIAL SCHOLARSHIP

This annual award is given to a licensed Amateur Radio operator pursuing a degree at any accredited post-secondary school. The individual must be a member of RARA and a resident of New York State. The award is for one individual for one year, but the recipient may reapply for subsequent years.



Download a [RARA Scholarship Application](http://www.rochesterham.org) at www.rochesterham.org.

Please answer all questions on the application completely. If any question is not applicable to your situation, enter N/A in the blank. Feel free to use additional sheets to explain your responses fully. This award is based on a combination of need, scholastic achievement, contributions to Amateur Radio, extra-curricular activities and community involvement. All information provided on the application will be held in the strictest confidence. No personal information will be released without the approval of the applicant.

The deadline to submit your application is April 15, 2016, so please do not procrastinate in completing the application and getting it mailed in! The winner of the Rochester Amateur Radio Association Memorial Scholarship will be announced in June, 2016. Good luck to all applicants!

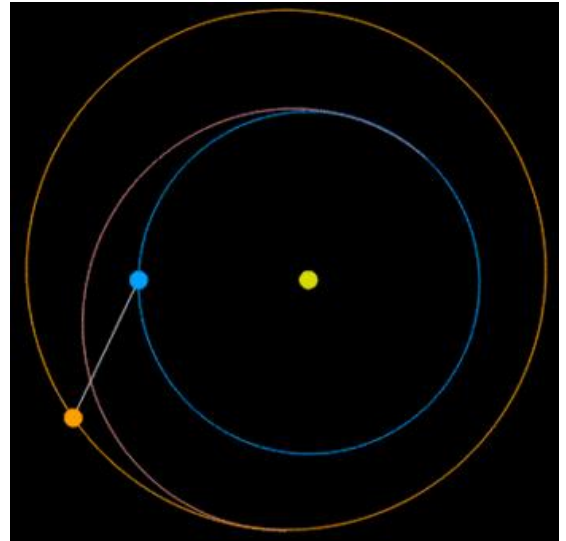
Please submit all applications to:

Rochester Amateur Radio Association
Memorial Scholarship Committee
P.O. Box 93333
Rochester, New York 14692-8333

FIRST 10 GHz VUCC EARNED BY EME THAT IS EARTH – MARS – EARTH

Jarred Jackson, KF2MR

A historic event took place between Canadian and US Amateurs in March 2016 with the required five QSOs in different grid squares using reflections from Mars. This was made possible using a modified version of the popular WSJT weak signal software. Using a 35m dish in Alberta Canada and a modified Direct TV dish on a mobile platform, US amateurs based out of Spokane traveled from northwest Washington to central Idaho in support of the Canadian research group (CMARS). Although the original intent was to validate feasibility of detecting signals in extreme noise environments, the team applied for and was granted the only known VHF/UHF Century Club (VUCC) award earned by reflecting signals off of Mars. At a distance of approximately 137 million km, it takes just over 7.5 minutes for a signal to reach Mars, and another 7.5 minutes to come back to earth. Compare this to a distance of 385,000 km to the moon and a delay of only a few seconds. The team completed the contacts using Faraday Operational Occlusion Limitation Technology. This method allows for determination of signals 48 dB below the noise floor. This amazing feat can be repeated by any amateur radio operator with this technology in North America in July 2018 when the Earth-Mars distance narrows to just 58 million km.



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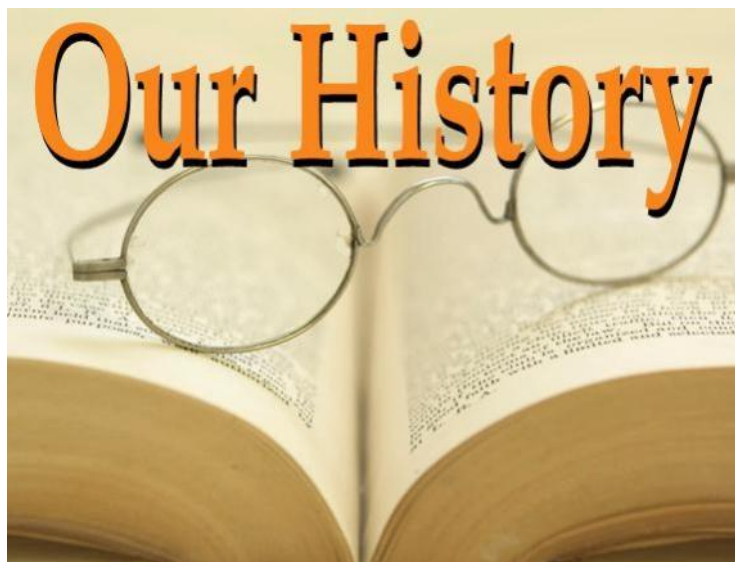
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A LOOK BACK AT EARLY HAM RADIO CLUBS IN ROCHESTER

Ed Gable K2MP RARA Historian
Curator Emeritus Antique Wireless Museum



Rochester's involvement with radio clubs goes way back to the very beginning of Amateur Radio itself. The first Ham Licenses were issued in November of 1912, and the first Rochester area radio club was formed only months later. Let us take a look at those organizations that brought us to where we are today.

Rochester Wireless Association – 1913: Records show the RWA to be the first organized amateur club in the Rochester area. There may have been others but those were probably loosely organized groups of radio enthusiasts whereas the RWA had a written constitution, membership requirements and a regular meeting schedule. Records are minimal, but we know that they reached a membership level of 40 people and met at the Rochester YMCA every Friday night.

St. Paul Amateur Radio Club – 1915 / 1917: This club is recognized by photographs in the archive but there is

little else to go on. The name describes the geographical location and gives insight into why several clubs emerged at the same point in time. The reason is simple... DX! A group of hams in Pittsford and a similar group in Webster would have little in common because they were so far separated that they could not contact each other on their primitive radios of the time. Most were running equipment such as Ford spark coils and the ten mile path was just too far. As such, there were local groups and a large encompassing organization was still in the future.

Rochester Radio Club – 1920: All formal Amateur Radio activity was stopped by a matter of federal law during World War 1. The post war period found a few early amateurs eager to start again as well as a small number of telegraphers coming out of the armed forces. This slow start brought these groups together to form and elect officers in the *Rochester Radio Club* in June of 1920. They met at the Mechanics Institute which would later turn into the Rochester Institute of Technology. One well known amateur coming out of this group was Mr. Ivan Loucks, W3GH, who would become head of the Amateur Radio Division at the FCC.

The Triangle Radio Club – 1921: This club was formed in 1921 with 8ANR as president. Note the call sign “8ANR.” No W8 yet, “W” call signs would come in 1928. Rochester, NY, call signs then were in the 8th call district. W2 call signs were issued in this area after WW2. I believe the “Triangle” in the name was the first attempt to gather the Amateur community into one group. In this case a triangle formed by Rochester and the Southeast and Northeast portions of Monroe County. Sorry Gates and Greece, you didn’t make notice yet. The club’s fame came from their recognition that a great publication was the key to tying an organization together. And they did that superbly with a monthly rag called *The Electron*. Volume one, Number one, January 20, 1921, featured none other than George Batterson, 8TC (W2GB), writing the feature article. George would become a leader in Rochester amateur radio, and co-founder of the Antique Wireless Association, for the next sixty years. Another high profile member was Dr. Cy Stoud, K2DQ, who became the Director of Eastman Kodak’s Research labs. He operated one of the country’s most sophisticated stations that included a receiver with eight vacuum tubes when most were still using crystal sets.

Radio Club of Rochester – December 1921: The *Radio Club of Rochester* was formed by closing and consolidating the *Rochester Radio Club* and the *Triangle Radio Club* into one organization and thus achieving the goal of having one large encompassing Amateur Radio organization in the Rochester area. It was a very strong club composed of the most active and prominent amateurs to be found in the area. There was a club station, with the call sign 8PZ, that was displayed and operated at many public events, fairs and festivals. The leaders saw the need to be recognized nationally and applied and were accepted as an ARRL affiliate. They had a very strong Constitution that bound members to Traffic Regulations that followed those of the Federal Radio Commission. The club closed in 1931.

Society of Rochester Transmitting Amateurs – January 1927: It happens that when you have an organization filled with very strong minded people at the top of their game, that some tend to go in another direction. That is what happened to the *Radio Club of Rochester* when some top people left to form SRTA. Leading members included Bill DeWitt, 8BRD (W2DD), who later gained fame as a leader in Amateur Television. Bill DeWitt and Al Balling 8ALY (W8ALY) were noted nationally when they combined efforts to build the first transmitter to cross the Atlantic on ten meters. Bob Hertzberg,

8CYI, became a national publicist in matters of radio technology. SRTA also had a club station, 8AC, that was located on top of the Times Union Building and continued publishing a very good rag called the "Monitor." SRTA is also noted for organizing the first Rochester Hamfest on August 5, 1927. The club closed in 1931.

Rochester Amateur Radio Association (RARA) 1931 – Date: Having two strong radio clubs operating simultaneously in the same area was problematic. Quietly, cooler heads prevailed and plans were brought forward to again have one strong encompassing amateur radio club and RARA was formed in February, 1931. Early leaders were John Long W2ABX, Engineer at WHAM, Al Balling W8ALY, and Ken Gardner W8BGN, Chief Engineer at WHAM. RARA continued to publish the "Monitor" which would evolve into the RARA Rag in September of 1949, with an eleven page edition. December 21, 1931, saw affiliation with the ARRL and continuing a long tradition brought W8QCN, and then K2JD, as a Club Station. The first RARA Membership Directory was printed in January 1932. RARA enjoyed much growth until again amateur radio was closed for the duration of World War II. Lifting of the ban on amateur activities brought hundreds of well trained military radio operators who found ham radio to be a gift for the taking. RARA emerges as a leader not only in Rochester but throughout Western New York and the Atlantic Division as the club to emulate. For many years Rochester was the go to place for great amateur gatherings known as the Rochester Hamfest and Atlantic Division Convention. Self perpetuation was achieved by years of Code and Theory classes that graduated hundreds of new Amateurs every year. It seemed as though if you were an active RARA member you also gravitated to public service work, where a Walk for Water or Hike for Hope became only possible via communications provided by Radio Amateurs organized through RARA. This activity formalized ARES and RACES to such a positive level that their services were written into Federal programs. As Amateur activities grew into specialized fields of VHF operations, DX'ing and others, amateurs still joined RARA first and then affiliated groups such as the Rochester DX Association, the Rochester VHF Group, the Rochester Mobile Club, RACES/AREAS, and even something called the Ladies Auxiliary of RARA. The Rochester Amateur Radio Association... support your club... it's a GOOD one... get active.

PERFORMANCE RALLY JUNE 3-4 NEEDS HAMS

Jon Dickason, N2JAC

Susquehannock Trail Performance Rally (STPR) is an exciting and demanding motorsport featuring some of the most challenging roads in the world, drawing top worldwide professional rally teams. STPR® 2016 marks the 40th running of this event, the oldest, continuously-running motor sports event in PA. Wellsboro PA is a scenic tourist destination, 2 hours south of Rochester. Licensed amateur radio operators are needed for rally communications, for net control, at spectator and safety checkpoints, to ride in rally vehicles, and other duties. Volunteers get free food, free camping, free t-shirt, pin and bumper sticker, free admission to the fairgrounds, the best rally spectating, and other benefits. This may be the most fun you'll have as a ham. Go to www.stpr.org for more information and to volunteer. Ask for more info at RARA meetings and someone will tell you their STPR stories. If you've never seen this type of motorsport before, it's similar to world rally or global rallycross, small powerful cars going as fast as they can through the woods on dirt roads.



FM FUN, NO REPEATER REQUIRED!

Ev Tupis, W2EV

Three times a year we “bust” the myth that it takes a repeater to make FM operations fun. The weekend before the Super Bowl was proof positive. It is when the ARRL’s January VHF Contest took place and the VHF FM airwaves around Rochester came alive with activity.

“CQ Contest” was heard far and wide, and every call lacked a typical repeater “courtesy beep”; because everyone was talking on simplex; engaged in simple and direct point-to-point communications.

The idea of a VHF contest is to contact as many different stations, in as many different grid-squares on as many different bands as possible.

Contacts were made between Ontario County and Orleans County! Contacts were made from the USA to Canada!

Contacts were made on not only 2 meters, but also 223 MHz and 446 MHz; even 6 meters! A small number particularly experimental stations even activated on 927 MHz and 1294 MHz!

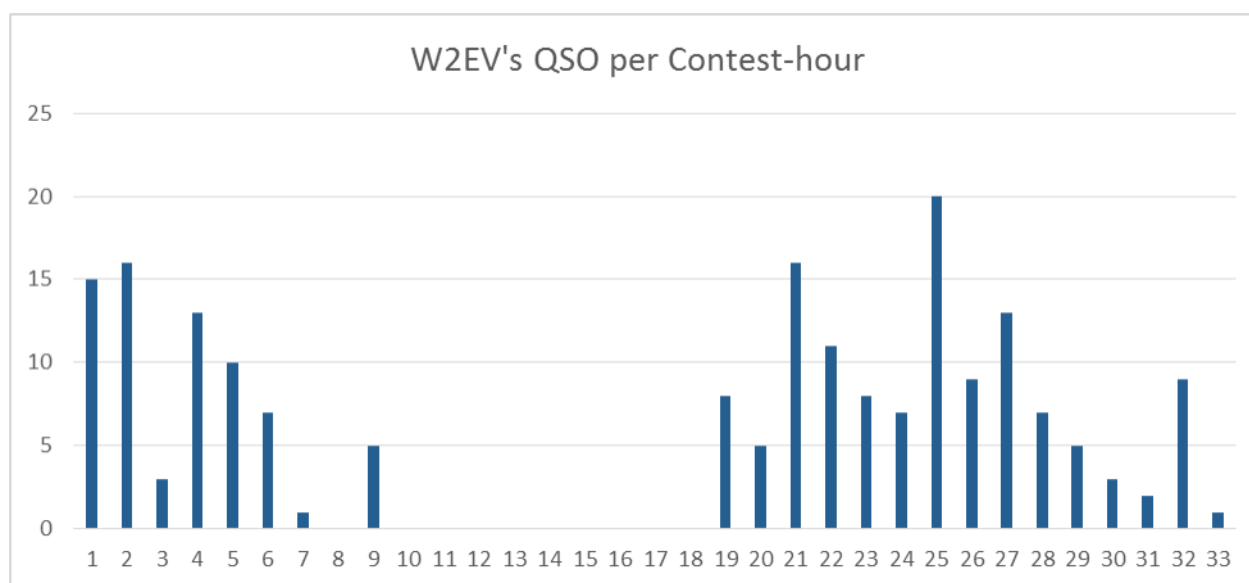
My station operated on the “bottom 4” bands: 50, 146, 223 and 446 MHz. For the most popular bands (146, 223 and 446 MHz) I used a simple Comet CX-333 omnidirectional vertical antenna that was mounted on a 15’ aluminum pole.

So, how did I do? Last year, I scored just over 3,000 points. With even more local activity, this year I cleared 6,000! Here is a table showing a band-by-band break-down.

Band	QSOs	Pts	Grids
50 FM	35	35	6
146 FM	84	84	7
223 FM	23	46	5
440 FM	50	100	6
Total	192	265	24

Score : 6,360

I remained active through the entire contest time...except for the 8 hours I decided to sleep on Saturday night into Sunday morning. Below is a chart that shows the number of QSO’s made per contest-hour. Doing the math you can see that there were several hours of high-excitement and several hours that were real snoozers. Such is the stuff of contests. It is this variability that makes contests invigorating and frustrating ... and FUN!



RARA member Duane Fregoe (K2SI) also played in the contest... FM-Only. He took a less intense approach and activated on 3 bands rather than all 4 that are allowed by this category. Duane capitalized on the increasing activity in the Rochester

area to more-than-double his score from last year. See his results in the attached table.

Band	QSOs	Pts	Grids
50	29	29	4
144	56	56	4
420	24	48	4
Total	109	133	12

Score : 1,596

By sharing our experiences we hope that more of our Technician-class, FM HT and mobile operators would take the plunge and give the next VHF contest a try.

What does it take to play? #1 get on the air with whatever you have, even if it is "just" an HT. Of course, you will do better with a higher-power mobile rig. If it is "just" an HT, then drive to a hilltop or take an elevator to the top of a building to extend your range. Exchange that "rubber duck" antenna for a mobile antenna to do even better. If you are operating from home, install an outside antenna. Each "upgrade" will take you to new levels of success.

Give it some thought and key-in on June 11 for the June VHF Contest!

RDXA and RVHFG

Invite you to the annual
Awards Banquet

Saturday April 16th, 2016

*Lilian's Restaurant and Party House
2200 Penfield Rd. in Penn Fair Plaza*

*Your choice of :
Ribeye Steak with Potatoes and Vegetables
Grouper Florentine
Chicken Parmesan*

Soup, Salad, Cheesecake, Coffee and Tea for \$25

6:00 p.m. Cocktails – 6:45 p.m. Dinner

Club Awards and Recognition

Over two dozen door prizes to be awarded

RSVP by April 12th
Jarred Jackson – KF2MR
Awards@RVHFG.org

RARA WINTERFEST 2016



Our sixth annual RARA Winterfest was held back in February on a perfect winter's day with sun, blue sky and fresh snow on the ground. Mendon Ponds was alive with kids sledding and adults cross-country skiing. We were warm and cosy inside Stewart Lodge with a fire and excellent food and coffee to enjoy. There was a full HF station set up Brad, KB2CHY that made several contacts and also some interesting homebrew regenerative receivers made by Todd, N2TMS. The number attending at just under thirty people was disappointing but those who did attend enjoyed plenty of good conversation and nobody went away hungry!

A special thanks to Anand Choudhri for the organization and to our chefs for the food. Prizes are awarded based on votes made by the attendees and congratulations to

our winners as follows. First Crockpot Prize went to Carol Spath for her Chicken, Sausage and Shrimp Gumbo. Second prize went to Larry, W2LB for his Chili and the dessert prize is awarded to LeeAnn Timmons, KD2FYA for her Apple Gingerbread Pudding Cake. They have all been awarded points that can be redeemed towards membership dues or for the annual RARA Banquet.



EARTH-MARS-EARTH CONTINUED

The key to this communications protocol is the ability to detect signals below the noise floor. To understand the details, the following formulas simplify how this is done:

$$\text{Path Loss (dB)} = 92.4 + 20 \text{ Log } (F_{\text{GHz}} \times d_{\text{km}})$$

$$\text{Antenna Gain (dB)} = 18 + 20 \text{ Log } (F_{\text{GHz}} \times d_m)$$

$$\text{Path Loss (db)} = 92.4 + 20 \text{ Log } (10.3 \times 137\text{E}+06)$$

$$\text{Antenna Gain (dB)} = 18 + 20 \text{ Log } (10.3 \times 35)$$

$$\text{Path Loss (dB)} = 275$$

$$\text{Antenna Gain (dB)} = 69$$

Applying the same antenna gain formula to the 1m mobile platform yields a gain of 38 dB for a total gain of 107 dB. To overcome the path loss, we now need to account for 168 dB as well as 12 dB from thermal noise, cosmic rays and other space noise. The minimum discernable signal in the system (5 Hz signal width) is -170 dBm. The link budget is easily addressed with 10W (40 dBm) transmitter power with margin left over. What's that, this doesn't work and I have no idea what I am talking about? I forgot to include the return trip (twice the distance and at least another 275 dB loss with trillions of watts of transmit power needed) ? OK you are right, the whole story is bogus, but then again isn't this the April edition of the RAG? So in honor of April 1st, this article is based upon FOOL Technology. Real moon bounce (EME) is certainly possible and performed every day by amateur radio operators around the world. 10 GHz still remains a very challenging band for EME. Calculating path loss when considering the shape and reflection characteristics of the moon can be complex, but is approximately 290 dB at 10 GHz:

http://physics.princeton.edu/pulsar/K1JT/EME_2010_Hbk.pdf

A real 5m parabolic antenna system with 50 dB gain on each end and a 100W (50 dBm) 10GHz transmitter results in a signal of approximately -140 dBm at the receiver, providing plenty of margin for WSJT modes and even the possibility of audible CW depending on conditions. But then again, not too many of us have such a system, offering an explanation for why only a few US amateurs have achieved VUCC on 10 GHz through EME.

So until we figure out how to apply quantum principles to communications, we will have to be content with EME standing for Earth-Moon-Earth. For a more serious (and more accurate) understanding of communications to Mars, take a look at the following link:

<http://www.astrosurf.com/luxorion/qsl-mars-communication.htm>

VE Team

February, 2016

Richard Gaudy	KD2KHB	G	Matthew Healey	KC1FCC	T
William Wojtyla	KD2KIB	T	David Scherer	KD2KIC	T
Lawrence Johnson	KD2HZI	G	Alex Fregoe	KD2KIE	T
Jonathan Alguire	KD2KID	T	David Horan	KD2KIF	T
Allan Wells	KD2KIG	T	Scot Makai	KD2KIH	T

March, 2016

Tyler Beckhorn	KD2KRB	T	Gregory Hunt	KD2KRC	T
Scott Theis	KD2KRD	T	Michael Putorti	KD2KRE	G
Robert Dugan	KD2KOR	G	Brandon Stinson	KD2KRF	T
Stephen Smiley	KD2KRG	T	Razy Kased	KD2KRH	T

New licensees names are in BOLD

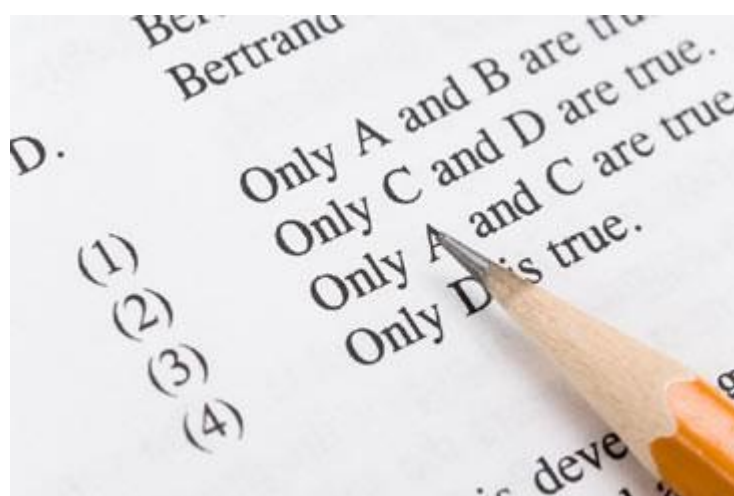
Next session:

April 16, 2016

RIT room 3139

Registration starts at 9:45AM

Testing from 10:00AM till 12:00 (noon)



RARA RAGS OF THE PAST

Ed Gable, K2MP – RARA Club Historian

20 YEARS AGO, APRIL, 1996

April brought better weather and local hams dreaming of Spring antenna projects. So what could be a better April program than the showing of ARRL's newest video tape, "All you wanted to know about antennas and were afraid to ask"? This video was very informative and for many it explained, for the first time, antenna radiation patterns and why you might want a vertical antenna for DX'ing and a horizontal wire for local work on lower HF bands. On the subject of ARRL products, the League just announced that past issues of searchable QST's are available on CD-ROMS. Membership Chairman Alex Piccirilli NV2Y, reported that there were 750 RaRa members. Irv Goodman AF2K, told readers that courtesy of RaRa, the main Rochester Rundell Library had copies of the new foreign and domestic Amateur Radio Callbooks. The Library will accept phone call requests to look up addresses. Lloyd Caves, WB2EFU, continued his monthly reports on planning progress for the May 31 thru Jun 2nd Hamfest. Ed, K2MP, writing for the RDXA, announced their plans for entry into the 1966 ARRL Field Day and that they are looking for Novices to run the Novice/Tech+ station. Contact Chris N2PEB, if interested. With regret it was reported Carl Amadio WB2BOD and John Minchella N2QYJ were Silent Keys. Glenwood Sales, a well known electronics surplus dealer on Hague Street, remained a long time advertiser.

40 YEARS AGO, APRIL, 1976

This April issue brought no April Fool's jokes but did feature information on pioneer Elmo Pickerill who was the first to merge two-way radio communications and aviation in 1910. Oh, yes, his flight instructor was Orville Wright and he also held the first radio operator license issued by the United States. That was the lead in to announce Old Timers night at RaRa with Bruce Kelley W2ICE and Linc Cundall W2QY, keeping members on the edge of their seats with tales (mostly true) of early radio. Featured in this issue was a nicely written report on the terrible earthquake in Guatemala and the heroic efforts of radio amateurs to provide essential communications. The article was written by Julio Ahumada, LU7BD / W2, and was very authentic as he was right in the middle of the fray. Julio was a very popular instructor at a local college and active in area ham radio as well. A half page column detailed plans for the Rochester Hamfest and NY State ARRL convention planned for May 21-23. Twelve dollars brought you everything; admission to the three day event and a sit down dinner and banquet at the Marriott hotel. You could get your advance tickets by mail from Ticket Chairman Ed Gable, W2MPM. President Bill March, WA2CER, penned an article telling of National Library Week. To honor that event RaRa bought sets of ARRL publications and donated them to area libraries. From the Want Ads you could buy a three bedroom ranch house, complete with 50 foot tower and antennas, from Jim and Deanna, WA2MKX/WA2YYZ. Glenwood Sales, a well known electronics surplus dealer on Hague Street, remained a long time advertiser. (anybody get that? - Ed)



the RARA RAG

Published by
ROCHESTER AMATEUR RADIO ASSOCIATION, INC.

VOL. 48 April 1996 NO. 8

APRIL MEETING FEATURES

ARRL ANTENNA VIDEO

We will have a video tape from ARRL on antenna's. To the best of my knowledge this is a new tape in that RaRa just purchased it, and that it has not been released prior to this time. It will become a part of what may become a RaRa lending library of tapes available to RaRa members, or any group wishing to borrow it for their own use. The title of the tape is "All that you ever wanted to know about antenna's, and were afraid to ask." I have previewed this tape and it is a demonstration of the field patterns exhibited by various configurations of antennas you may put up. It will give you some foresight on what a particular antenna configuration will do for you at your location, gives you an idea what effect polarization has and what height above ground will do to the antenna. All this is done on a display panel operating at several gig. No specific antenna configurations are recommended for your application but much food for thought. The length of the tape is 1:08:30, so be prepared. If time permits a question and answer session can follow. If the tape proves to be too long for a regular meeting, it can be shown in segments.

Re: the February meeting, the only feedback that I have received was to the effect that "I should have used the microphone." Apparently there were those who could not hear me well, and for this I apologize. If you have trouble hearing me at any time, please speak up and let me know. Ineffective speaking is worse than none. I am not afraid of the microphone, as many of you know.

By the time you read this, I will have been in and out of the hospital and had an operation for removal of a cancerous prostate. Am looking forward to a complete recovery and being with you all soon, possibly at the April meeting....

Rochester Hamfest

May 31 - June 2, 1996

RaRa MEETING

April 5, 1995
8:00 P.M.
Henrietta Fire Hall
3129 East Henrietta Road
ARRL ANTENNA VIDEO

NEW CD-ROM VERSION OF QST AVAILABLE IN MARCH

from The ARRL Letter

The new CD-ROM version of QST was the hit of the ARRL booth at the Miami Tropical Hambocon February 3-4. Here, QST Editor Mark Wilson, AA2Z, right, runs the demonstration disk through its paces for a pair of interested visitors. The CD-ROM-to be available in mid-March-features an entire year's worth of QST, plus QEX and NCJ (1995 issues for the initial offering), including full text, photographs, schematics and other graphics, and advertisements. Among other things, users can search for text and zoom in to schematics and diagrams to enhance detail. The text includes hypertext links. (Copies are \$19.95 for members and \$29.95 for nonmembers, plus \$4 shipping. To order one, e-mail pubsales@arrl.org or, read more about it at <http://www.arrl.org/ads/cdrom/>.)

SILENT KEYS

Carl R. Amadio
WB2BOD
February 1, 1996

John R. Minchella
N2QYJ
February 7, 1996

The RARA RAG

Published by
The Rochester Amateur Radio Association
INCORPORATED

VOL. 28 APRIL 1976 NO. 8

APRIL 2nd MEETING - - - OLD TIMERS NITE

Young and old alike will enjoy Friday evening's A.W.A. show telling about one of the last truly great radio and aviation pioneers, Elmo Pickerill, who died in 1968. Reproduce inside is a copy from a New York newspaper telling of a celebration in his honor. Pickerill's radio associates include DeForest and Marconi while his aviation friends were such celebrities as Arthur Godfrey, Amelia Earhart, Charles Lindbergh and Orville Wright, who taught him to fly in 1910. Photography by Linc Cundall, W2QY, with Bruce Kelley, W2ICE, providing the sound interviews. Meeting place data: Monroe County Farm & Home Center, 249 Highland Avenue, 8 p.m., Friday, April 2.

Guatemala Aid

by Julio Ahumada, LU7BD / W2

In the last issue of the RAG, information was requested about the activities relating to the help given during the Guatemala tragedy. I was able to help to a degree by relating medical supply messages to and from medical personnel of the U of R (Dept. of Anthropology) and medical doctors in Guatemala.

With the help of S.I.R.A. Sociedad Internacional de Radio Aficionados (International Society of Radio Amateurs), all the priority traffic was coursed with the assistance of net control stations HK3CE/W4, WA2ZZG, VE3DPQ/W4 in Miami and TG8LL, TG9MP in Guatemala City.

Incoming and outgoing welfare traffic from Guatemala (I personally handled more than 150 messages) was coursed with the help of TG9DP, TG9RS, TG8LL and others.

The operators in Guatemala are to be highly commended for their dedication, some of whom worked around-the-clock shifts. TG9MP, Jose Mamet, lost his voice for hours and slept in his station wagon.

Beside the normal fatigue developed by long hours of work, one of the main problems was the QRM the first weekend of the DX contest. Some with a confused sense of values complained because of the emergency nets QRM on a DX station..... Oh well!!!

The nets were overloaded to say the least, and in order to put anything through, it was necessary to spend hours. The Guatemala

ROCHESTER HAMFEST - MAY 22

The Rochester Hamfest, now combined with the New York State ARRL Convention will be here the weekend of May 21-23. A copy of the program will be in the mail to you very soon.

Registration this year will be \$4.00 at the gate, \$3.50 in advance. Banquet tickets are \$8.50. Because of the limited space available for the banquet, it will be a sellout before Hamfest day. If you plan to attend the banquet be sure to get your ticket in advance.

As a special gesture to RaRa members only, registration tickets will be available for only \$3.00 to those who purchase them in advance at the club meeting. In order to qualify, you must show your current membership card to ticket chairman, Ed Gable, W2MPM. The special price is a 25% discount over regular prices.

While the Hamfest principle activities will be at the Fairground, there will be many things to do at hotel headquarters, the Rochester Marriott on Friday evening and Sunday morning. Friday evening is when the Funfest happens with an opportunity to meet your friends and enjoy some entertainment. Some of the exhibitors will have open house in their suites.

On Sunday morning, programming is scheduled at the Marriott. The most important is the ARRL Forum scheduled at 11 a.m. After lunch a giant transmitter hunt is slated for 2 meter FM buffs.

For those who will be making reservations at the Marriott for their friends, please be sure to tell the reservation clerk that your party is with the Hamfest so special rates can apply.

Main points to remember: FCC exams on Saturday. Applications go to FCC, Philadelphia with \$4 fee marked for examination at Rochester Hamfest. Flea market - Saturday only. Banquet at the Marriott at 7:30 p.m.

telephone system was practically inoperative, and in order to obtain priority return messages in some instances, it was necessary for them to send a messenger to deliver and obtain information. During the first two weeks there was no operation on two meters. (TGS were not equipped with 2M, FM gear.) This was a handicap.

Above is a brief description of the days following the earthquake. I must say that the Multi Language feature my station is equipped with helped me and others to a great degree.

RARA CALENDAR

Tim Barrett, K9VB

April 2016						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
					1 ARA Monthly Meeting 7:00pm, BSA HQ, 2320 Brighton Henrietta TL Rd	2 15M SSTV Dash LZ Open 40M Sprint
3 15m SSTV Dash MS/MO QSO Parties SP DX Contest NA SSB Sprint RSGB RoLo Contest	4 ARS Spartan Sprint	5 Phone Fray	6 SIARC 7.30pm UKEI 80m Contest	7 NCCC Sprint SARL 80m QSO Party NRAU 10m Activity Contest	8	9 OK/OM DX Contest SKCC Weekend Sprintathon NM/GA QSO Parties Gagarin Int. Contest
10 OK/OM DX Contest SKCC Weekend Sprintathon NM/GA QSO Parties Gagarin Int. Contest	11 144 MHz Spring Contest	12 Phone Fray	13	14 NCCC Sprint	15 Holyland Contest	16 Holyland Contest ES Open HF Championship. Worked All China DX Contest
17 ARRL Rookie Roundup	18	19 RDXA 7.30pm Phone Fray	20	21 NCCC Sprint	22	23 10-10 Spring Contest, Digital Helvetia Contest
24 10-10 Spring Contest, Digital Helvetia Contest	25	26 Phone Fray	27	28 NCCC Sprint	29	30 Russian WW Multi-mode Contest FL QSO Party

Print this calendar and leave it by your radio.

NEWS FROM AREA CLUBS

MONROE COUNTY ARES / RACES NEWS

The Monroe County Amateur Radio Emergency Service, Inc. holds its meetings on the fourth Thursday of each month. Anyone interested, members and non-members, are welcome to attend.

The next ARES Meeting will be held on: **Thursday, April 28, 2016, at 7:00 PM.**

Meetings are held at the **Greater Rochester Chapter of the American Red Cross HQ, 50 Prince Street, Rochester, NY 14607.** (Located behind the Rochester Auditorium Theatre, 885 Main St. E.)



ARES NET: Monroe County ARES/RACES meets on the air every Thursday of the month at 8:00 pm, on the 146.61 MHz (-) 110.9 Hz PL repeater. The only exception to that are nights when we hold our regular meeting, generally on the 4th Thursday of the month.

WEB: www.monroecountyemcomm.org

Severe Weather Alerts: Summer often brings severe weather in the form of heavy rain, wind, hail, lightning and thunderstorms. If you experience any of these forms of severe weather, and especially when accompanied by damage to property in your area, listen to your local ARES/RACES repeaters for information. While official ARES/RACES activation could be a possibility, it is more important that we open a spontaneous net simply to share information about weather conditions in your immediate area. Don't wait for someone else to do it. Pick up the microphone and start a net. If you don't have a copy of the directed net protocol, you can find one at the WEB address listed above. (Activities/ARES Net/ Net Script/ Downloads)

NBEMS: Want to learn about Narrow Band Emergency Messaging System (NBEMS)? It's the latest and easiest way to "Go Digital!" Bring your laptop computer and 2-M handheld transceiver. We will conduct an NBEMS clinic after every meeting through June 2016.

ROCHESTER RADIO REPEATER ASSOCIATION, RRRRA

The Rochester Radio Repeater Association, RRRRA invites you to attend its April 15th 2016 meeting. Meetings are held on the 3rd Friday of the month in the Pittsford Town Hall Basement starting at 7:30 pm.

The RRRRA officers are Bob Shewell, N2HJD President, Bob Odell, N2BZX Vice President, Ed Wilkonski, KC2WM Secretary, and Joel Rossbach, N2EZV Treasurer.

RRRA also accepts donations to the club. If you are not currently a member and want to support RRRRA, you can join at our monthly meeting or on our web site WWW.K2RRRA.ORG

I hope to see everybody there on the 15th.

ROCHESTER VHF GROUP

The Rochester VHF Group holds monthly meetings on the second Friday of the month between September and June. Meetings begin at 7:30 PM and are held at the Spencerport Wesleyan Church, 2653 Nichols St. (NY Route 31) in Spencerport. Visit our website www.rvhfg.org for details.

The Rochester VHF Group sponsors an informal On-Air Net every Monday at 2100 local time on 144.260 MHz USB and a 6 Meter Net every Thursday at 2100 local on 50.200 MHz USB.

More club information can be found by visiting www.rvhfg.org or just calling in any Monday or Thursday night. All are welcome to check in to these nets.

ROCHESTER DX ASSOCIATION, RDXA

March Meeting: Tuesday April 19, 2016
Time: 7:30pm
Location: Monroe County EOC Building, upstairs
1190 Scottsville Road, Rochester, NY 14624



All are welcome

XRX AMATEUR RADIO CLUB

The next meeting of the XRX Amateur Radio Club will be at 6PM Thursday April 14 at the Webster Recreation Center. Bob Karz K2OID will be giving a talk on the Flex 6300. All are welcome, as usual, more info and latest updates at <http://xarc.us>

SQUAW ISLAND AMATEUR RADIO CLUB, SIARC

The Squaw Island Amateur Radio Club (SIARC) meets every second Wednesday of the month at 7:30PM at the Ontario County Safety Training Facility, 2914 County Road 48, Town of Hopewell. We have License Exam Testing every other month which begins at 6:30PM. The April meeting will be on Wednesday, April 13th. We will begin the meeting at 6:30PM this month to allow time to start the assembly of the 40mtr QRP Transceivers 73's Steve Benton VP SIARC WB2VMR

AMATEUR RADIO ASSOCIATION OF THE SOUTHERN TIER

COMMUNITY AMATEUR RADIO CLUB, CARC

Welcome to the 12 new hams from our last testing session! We'd also like to invite any ham to join our YL operators in honing his or her simplex skills (When the repeater goes down, we're already on simplex!). We meet at the Hoag Library (134 S. Main St. Albion, NY) on the first Saturday of each month at 7pm. Each meeting has a brief training/refresher period. The club holds a net every Sunday evening at 9pm (summer) and 8pm (winter) - 0100 UTC Monday - on 147.585 simplex, and we host the Thursday Night Social Net, Thursday at 8:30pm on 147.285+. We'd love to hear you check-in! Take a look at the club website for more info: www.k2srv.org and maybe even throw your call out on our repeater (442.875+ 141.3) if you are in the Albion area.

DIGITAL COMMUNICATIONS ASSOCIATION OF PERINTON, DCAP

DCAP members continue to experiment with leading edge digital communications modes. We were formed in 1994 to foster the development of local and regional packet radio networks using AX25 and TCP/IP. Today we have members using the club sponsored DSTAR repeater (KB2VZS on 444.8MHz), several personal and public [DSTAR hotspots](#) (using the dvprtr board), Yaesu fusion systems on non-club repeaters and DMR. The last mode is being enjoyed locally through a [DV-Mega-Raspberry PI](#) combination. DCAP meets for breakfast at 7am nearly every Saturday morning at [Rikki's Family Restaurant](#) in Fairport and everyone is welcome to join us. Talk in is on the KB2VZS analog repeater on 146.715MHz with a PL of 110.9 Hz.

INTERLOCK ROCHESTER - K2HAX - ROCHESTER'S HACKERSPACE

Here's some of our events for the month of April:

- * Friday, April 1, 7pm: Rochester 2600 Meeting - <http://www.rochester2600.com/>
- * Tuesday, April 5, 7pm: Monthly Business Meeting & Member Presentations, open to the public.
- * Friday, April 8, 7pm: Software-Defined Radio (SDR) Meetup
- * Saturday, April 16, 12pm to 4pm: Linux Workshop

And on April 23, you'll want to be at Rochester's only free and open hacker conference, BSidesROC! Visit www.bsidesroc.com for more information.

Interlock is open most every Tuesday night at 7pm. We're in the Hungerford Building (1115 East Main Street, Rochester NY), just north of Village Gate. Come to Door #7 (next to Comics Etc) and buzz Suite 200.

Visit our website at interlockroc.org and contact info@interlockroc.org with any questions, or find us in #interlock on Freenode IRC.

Genesee Valley Amateur Radio Association

Upcoming Events:

April 24th & May 22nd - Testing at 5:30pm. Meeting at 6:30. Livingston Co Gov't Center 2 Court St. Geneseo.
June 25th & 26th - Field Day Event. Location to be announced.

This Spring our Presentations at our meetings have been involving Digital Radios; D-Star, Fusion, DMR, P25...

For our April Meeting we are looking for anyone that would be interested in doing a presentation/demo on DMR. If you are interested in giving a presentation please contact Billy Boyd, N3DSP at n3dsp@lafireline.net

If anyone is interested in giving a presentation/demo at our May meeting any of these topics, also please contact Billy Boyd.

Hamfests

Drumlins ARC

April 23, 2016
Palmyra, NY

<http://drumlinsarc.us/>

Dayton Hamvention

May 20 - 22, 2016

<http://hamvention.org>

RARA Rochester Hamfest

May 28, 2016
Rochester, NY

<http://www.rochesterhamfest.org/>

RAGS 2016 Hamfest

July 10, 2016
Cicero, NY

<http://ragsclub.org>

Ithaca Hamfest

August 6, 2016
Trumansburg, NY

<http://tcara-ny.org/hamfest/>

KLARA Hamfest & Campout

August 8, 2016
Hornell, NY

<http://klara.us>



THE AMATEUR'S CODE

Originally written by Paul M. Segal, W9EEA (1928)

THE RADIO AMATEUR IS:

CONSIDERATE	Never knowingly operating in such a way as to lessen the pleasure of others.
LOYAL	Offering loyalty, encouragement and support to other amateurs, local club, and the American Radio Relay League, through which Amateur Radio in the United States is represented nationally and internationally.
PROGRESSIVE	With knowledge abreast of science, a well built and efficient station and operation beyond reproach.
FRIENDLY	With slow and patient operation when requested, friendly advice and counsel to the beginner, kindly assistance, co-operation and consideration for the interests of others. These are the hallmarks of the amateur spirit.
BALANCED	Radio is an avocation, never interfering with duties owed to family, job, school or community.
PATRIOTIC	With station and skill always ready for service to country and community.

VISIT THE RARA WEBSITE!

Did you know that your club's website (www.rochesterham.org) offers these features and more?

- Photos of meetings & events (you might be in there!)
- Info on upcoming meetings/programs
- Rochester Hamfest information!
- Online membership & renewal
- Track and redeem your Reward Points
- Public service info & sign-up
- VE testing info
- Back issues of the RAG in PDF
- Officer contact
- List of past presidents
- Online membership directory
- Order RARA logo products
- Useful Internet links
- Ham Radio 101 – tons of tutorial info, plus net & repeater listings



RARA MARKETPLACE

Your commercial ad could be here! The RARA RAG can help spread the word on your business at very reasonable rates.

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	- 2 x 7.3	\$300
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	- 8.6 x 3.5	\$600

The above prices are **per year** - not per month as is typical in other publications.

Your advertisement will be seen by amateurs in Rochester, Monroe County, New York State, the United States and even the rest of the world. RAG circulation is approx. 8,000.



Get your message through!
Advertise in the RaRa RAG -
Read by over 8,000 radio enthusiasts each month.

For more information: Editor@RochesterHam.org

RARA OFFICERS

OFFICERS

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Club Station Trustee	Jim DiTucci, N2IXD	n2ixd@arrl.net
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Webmaster	Frank Schramm, WB2PYD	wb2pyd@gmail.com

MAY RAG DEADLINE

APRIL 15, 2016



**RARA meets at 7PM on the
first Friday of each month;
come join us at:**

Seneca Waterways Council, BSA Headquarters
2320 Brighton Henrietta Town Line Rd
Rochester, New York 14623

Get Directions

Rochester Area Repeater Listing

ROCHESTER AREA RADIO CLUB CONTACTS

Antique Wireless Association (AWA)
Lynn Bisha, W2BSN: lbisha@rochester.rr.com

Community Amateur Radio Club (CARC)
Joe Gangi, AC2NB: ac2nb.carc@gmail.com

Digital Communications Association of Perinton (DCAP)
Gary Skuse, KA1NJL: ka1njl@arri.net

Drumlins Amateur Radio Club Ltd. (DARC)
Alan Cook, K2MPE: acook003@rochester.rr.com

Fisherman's Net Amateur Radio Club
Jim Sutton, N2OPS: jim@otrym.org

Genesee Valley Amateur Radio Assn.
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Monroe County ARES
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Rochester Amateur Radio Association (RARA)
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Rochester DX Association (RDXA)
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Rochester Radio Repeater Association (RRRA)
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Rochester VHF Group (RVHFG)
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Squaw Island Amateur Radio Club (SIARC)
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XRX Amateur Radio Club
Brian Donovan, K2AS: k2as@outlook.com

THE RARA RAG

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